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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/214,708 01/11/99 ITANO

M XI/P6217USO

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IM22/0410

EXAMINER

SMETANA, J

ART UNIT

PAPER NUMBER

1746

DATE MAILED:

04/10/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/214,708

Applicant(s)

ITANO, MITSUSHI

Examiner

Jiri F. Smetana

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1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2001.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-7, and 10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-7, and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The objection to the specification is withdrawn pursuant to Applicant's amendment.
2. The objection to the claims for failing to commence with "What is claimed is:" is withdrawn pursuant to Applicant's amendment.
3. Rejection of claims 1, 2, 5-7, and 10 is maintained.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, and 5 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Babacz, U.S. Pat. No. 5,234,723.

The claimed invention reads on Babacz as follows: Babacz discloses a gaseous mixture of CF₃CFCF₂ (hexafluorpropylene) and oxygen, nitrogen, or any noble gases (column 5, lines 65-68; column 6, lines 1-13).

The elements in the claims are read in the reference.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 6, 7, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gabric et al., U.S. Pat. No. 5,281,302, in view of Sony Corp., JP 04-346429.

Gabric discloses a chamber cleaning method by treating a plasma CVD chamber of a semiconductor production device with a gaseous mixture of at least one fluorinated carbon, or any other similar fluorine containing gases (column 2, lines 3-5), and oxygen (column 2, lines 27-44).

Gabric does not disclose the use of CF_3CFCF_2 gas.

Sony Corp. discloses the use of CF_3CFCF_2 unsaturated gas (column 7, line 46).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to claim a method as disclosed in Gabric in combination with Sony Corp. because Sony Corp. teaches that dry etching in the preparation of semiconductor devices with a variation of unsaturated gases with the basic formula of C_xF_y , where $x=2$ or more and $y=2x$ or less, but preferably CF_3CFCF_2 (hexafluoropropylene) gas, because the type and number of bonds are not specifically limited and may be tailored to desired etching results (column 5, lines 30-50). The reference of JP 04-346429 by itself teaches Applicant's method of "treating a plasma CVD chamber" with CF_3CFCF_2 .

Response to Arguments

8. Applicant's arguments filed 8 March 2001 have been fully considered but they are not persuasive.

Applicant argues that Babacz does not disclose or suggest a chamber cleaning gas of CF_3CFCF_2 (hexafluoropropylene). However, Applicant is merely attempting to claim a composition of a gas of CF_3CFCF_2 . It is not material what the gas is used for, as long as it is

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known. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). The attempt to claim that CF_3CFCF_2 as a chamber cleaning gas is irrelevant since this is a mere future intended use of Applicant's invention. Such future intended use is given little weight upon consideration of patentability. The use of the CF_3CFCF_2 in Babacz need merely be capable of performing the claimed future intended use, and in this case it would.

Applicant argues that Gabric is completely unrelated to solving the problem of providing a cleaning gas with much lower global warming potential and suitable to remove reaction byproducts attached to walls of plasma CVD chambers of a semiconductor integrated circuit production devices. However, obviousness under 103 is not negated because the motivation to arrive at the claimed invention stemming from the applied prior art does not coincide with appellants' motivation. *In re Dillon* 16 USPQ 1897.

Applicant argues that it would not have been obvious to combine Gabric and Sony Corp. because plasma cleaning and dry etching are inherently inconsistent methods. Applicant has clearly failed to support this statement. Gabric states that dry etching is a form of plasma cleaning (column 1, lines 7-8; column 1, lines 52-59).

Applicant also argues that an etching technique for semiconductor devices and a cleaning technique to remove byproducts from the walls of CVD chambers are different processes and the

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appropriate gases for carrying out these techniques are different. Applicant has also failed to support this allegation. Gabric states that since reaction chambers are generally already designed for plasma-enhanced deposition of etching, current chamber cleaning ensues on the basis of in situ dry etching with etching gases activated in the plasma (column 1, lines 59-62).

Applicant argues that neither Gabric nor Sony Corp. either alone or in combination, disclose or suggest that a chamber cleaning gas consisting only of unsaturated chain fluorocarbons would be effective as chamber cleaning gas. However, Applicant's claims recite the language "a chamber cleaning method comprising ...", therefore other gases may be included in the cleaning gas. In this case, the alternative expression of Markush language does not limit the claims to only the limited species.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

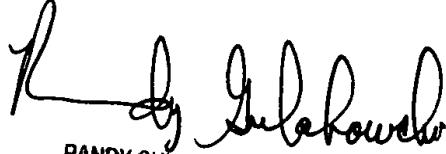
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jiri F. Smetana whose telephone number is (703)605-1173. The examiner can normally be reached on Monday-Friday (7:30am-4:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (703)608-4333. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-7718 for regular communications and (703)305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

Jiri F. Smetana
Patent Examiner
Art Unit 1746

jfs
April 6, 2001


RANDY GULAKOWSKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700